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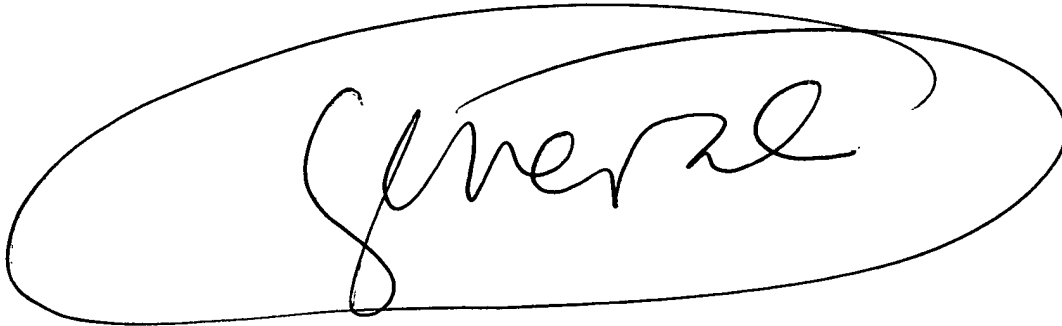
May 14, 2002

DOCUMENT-IDENTIFIER: US 6387593 B1

TITLE: Self-trapping and self-focusing of optical beams in photopolymers

Brief Summary Text (29):

A common nonlinear optical phenomenon in the prior art takes advantage of a light induced change in the imaginary part of the index of refraction (equivalently absorption) upon exposure. For instance, contrast enhancement layers (CEL) formed of a photobleachable dye are often overcoated on a photoresist to improve the contrast of the projected image as it passes through the layer [S. V. Babu et al., J. Vac. Sci. Technol. B 6, 564-568 (1988), S. V. Babu, E. Barouch, J. of Imaging Science 33, 193-199 (1989), B Davari et al., IEEE Transactions on Electron Devices 39, 967-975 (1992), M. Endo et al., J. Vac. Sci. Technol. B 6, 87-90 (1988), B. F. Oriffing, P.R. West, in Solid State Technology 1985), pp. 152-157, Y. Hiral et al., J. Vac. Sci. Technol. B 5, 434-438 (1987), D. C. Hofer et al., "Characterization of the induction effect at mid-ultraviolet exposure: application to AZ2400 at 313 nm," Optical Microlithography-Technology for the Mid1980's (SPIE, 1982), vol. 334, pp. 196-205, K. Kaifu et al., J. Vac. Sci. Technol. B 5, 439-442 (1987), W. Loong et al., J. Vac. Scm. Technol. B 8, 1731-1734 (1990), T. Ochiai et al., S. Photochem. Photobiol A: Chem. 65, 277-284 (1992), Y. Tomo et al., Polymer Engineering and Science 29, 902-906 (1989). The CEL introduces exposure thresholding through absorption photobleaching. This improves the contrast of the projected image, and has been incorporated into a 0.25 .mu.m i-line process [B. Davaii et al., IEEE Transactions on Electron Devices 39, 967-975 (1992)].



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L2: Entry 38 of 107

File: USPT

Oct 10, 2000

DOCUMENT-IDENTIFIER: US 6130013 A

TITLE: Birefringent interlayer for attenuating standing wave photoexposure of a photoresist layer formed over a reflective layer

Brief Summary Text (11):

In addition, Tsujita, in U.S. Pat. No. 5,547,813, discloses a method for forming within a microelectronics fabrication a fine photoresist pattern of high resolution while employing a contrast enhancement layer. The method employs a spacer layer of index of refraction 1.3 to 1.4 separating the contrast enhancement layer from a photoresist layer from which is formed the fine photoresist pattern, where the thicknesses of the contrast enhancement layer and the spacer layer are further co-specified.